POWERBEE SOLAR PUMP KIT USER'S MANUAL

IMPORTANT READ THESE PRIOR TO INSTALLATION

Sunspray 500 fountain

1. OVERVIEW

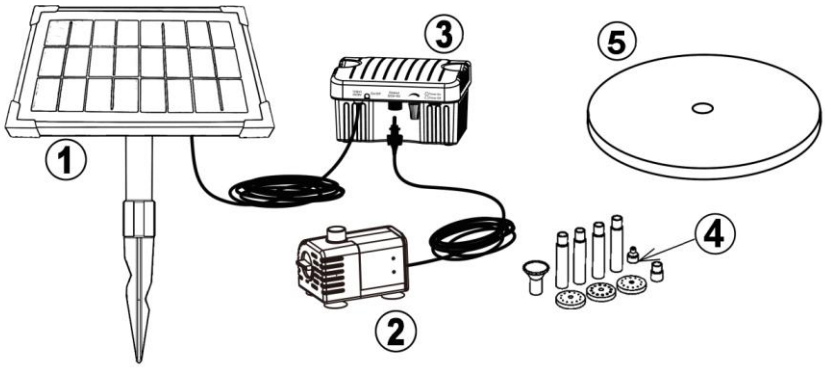
1) The solar pump is designed for outdoor or indoor fountain use, and is powered by a solar module. In order to make the pump work by solar energy, the solar module needs to be placed in the sunlight **FACING THE SUN.** The performance is **dependant on orientation** and sunlight intensity, a south facing orientation is required for this unit for all year operation.

2) The pump is supplied by the battery unit which is charged by the solar module.

3) The pump introduces the latest DC brushless motor technology, it has high efficiency and long service life, and it has built-in function of dry-run protection. Two sensor points are provided on the side of the housing for dry-run protection. The pump works if these points are under water. If a point projects out of the water, the pump does not work.

4) The pump flow rate can be adjusted by the means of the flow valve (referring to the right photo).

2. COMPONENTS



1) Solar panel 2) Pump 3) Battery back-up 4) Nozzle accessories 5) Foam disk

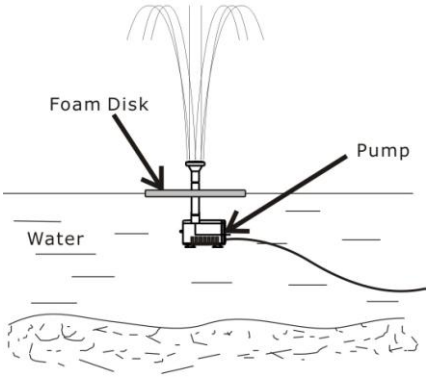
3. ASSEMBLING

1) Unpack all components carefully.

2) Connect the "INPUT" cable of the battery back-up to the solar module, and tighten the screw for protection. Screw the ground spike tight at the back side of the solar module and insert the solar module at a sunny place, adjust the angle let the solar module facing the sun.

3) Insert the pump plug to the "OUTPUT" socket of the battery backer-up, and also tighten the screw.

4) For a floating fountain (deep water), just assemble the nozzle and foam disk to the pump according to the right photo, the nozzles can produce 4 different jet shapes.



5) Make sure to place the pump fully underwater when the pump operates.

6) Turn the switch to the position "ON". The bicolor LED illuminates GREEN. The solar pump is starting to operate. **The LED may illuminate RED while it operates at first time, because the battery will lose energy slowly in stock. It just needs to be charged for 2 to 3 hours in the sunlight, then it will change to GREEN and the pump starts to work.**

7) The pump will automatically stop running while the battery is discharged to its lower limit voltage, and the LED illuminates RED in the meantime.

8) When the battery is recharged to its starting voltage, the LED will flash RED-GREEN twice every 10 seconds, and it will last 30 minutes. Then the pump will automatically operate and the LED illuminates GREEN again.

9) Adjust the regulator switch to get different pump performance. The pump can operate at the voltage range of 6V-9V.

10) Turn the timer switch to the position "ON", the pump works 15 minutes every hour. It can save the battery energy in this operating mode, especially for winter or cloudy day use.

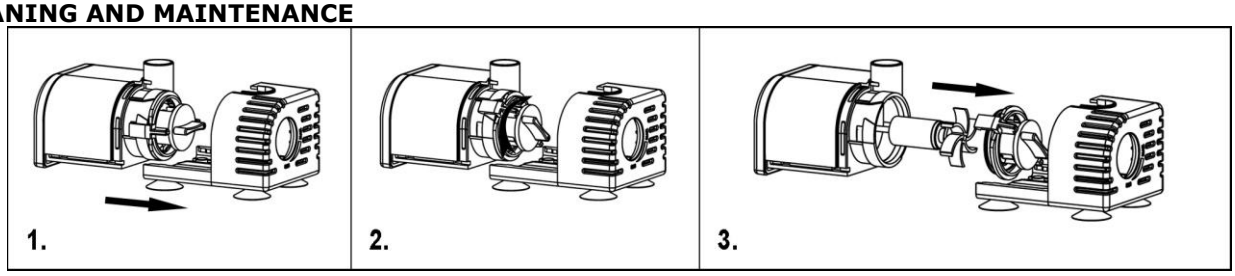
11) If you want to have long operating time in the evening, then turn the switch to "OFF" position during the day and turn it "ON" whenever you need.

Note: The battery will be always charged in the sunlight no matter whether the switch turns to "ON" or "OFF"!

4. CAUTIONS

1) Do not connect the pump to any AC voltage power directly; it's **ONLY** for DC Voltage power as supplied
2) Operate the pump in freshwater only (never above 40 degrees), especially keep it away from flammable liquids.
3) Do not strike the solar panel.
4) Do not alter or change the components of the product.
5) Do not leave the battery back-up in direct blazing sunlight or heavy rain; do not expose it to extremes of heat or cold which can affect its service life.

5. CLEANING AND MAINTENANCE



If after some time the pump starts losing power or stops working, please clean up sediment in the pump shell or filter cribs. Note the pump can be opened by pressing down on the bottom of the filter housing (See the above photo for demonstration, a quick spray of WD40 is also recommended to improve performance), when placing the housing back on ensure a flat flush fit to the casing, and take care.

To clear the impeller, open the pump housing at the front by sliding up the front plastic cover.

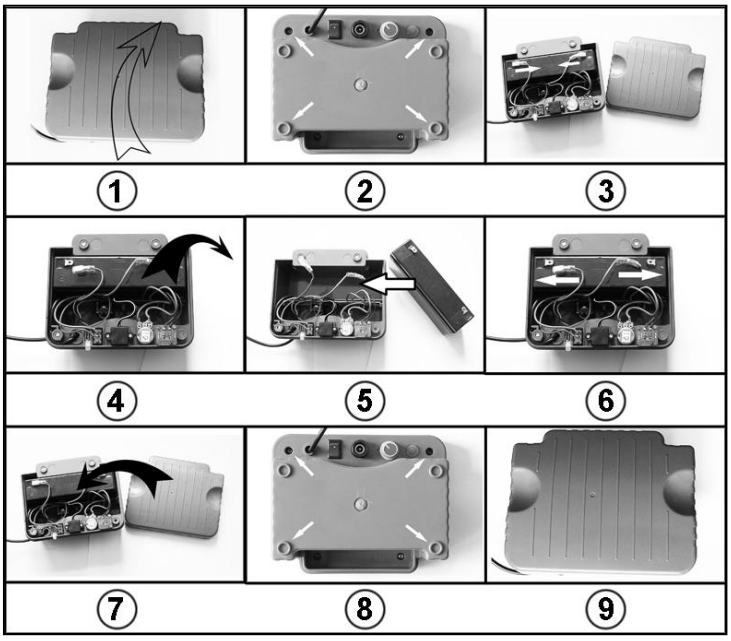
*** Be careful, never drop down the ceramic axis while cleaning the impeller, it breaks easily.**

*** The solar module should only be cleaned with soft tissue or glass cleaning solution.**

6. FUNCTIONALITY PROBLEMS

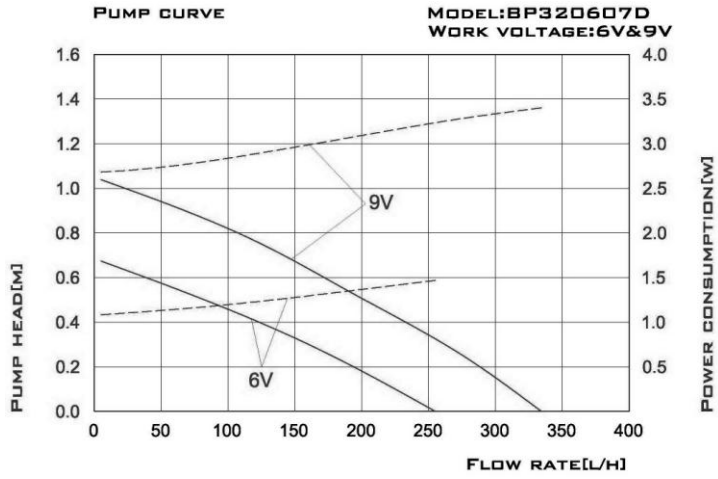
***Pump does not operate even though the solar panel is in full sunlight.**

1) The timer switch is at "ON" position.
2) In cloudy or rainy days, the battery cannot get sufficient power supply during the daytime. The LED indicating light will turn to red from green that shows the battery is in low voltage condition, it needs to be charged.
3) No connection—check the connections of the solar module and the battery station.
4) Impeller is blocked — to clean the pump, remove the front plate and the impeller, and use a small brush or water to remove any debris.
5) The storage battery inside the box will begin to lose efficiency after a year and a half and therefore may need to be changed, please contact PowerBee for replacement parts.



7. TECHNICAL DATA AND PUMP CURVE

Peak Power of Solar Panel	3.5 W
Operation Voltage	6-9 V
Rechargeable battery	6V, 3.2Ah
Maximum Water Lift Height	1.25m (4.1ft)
Maximum Flow Rate	330L/H (87.2GPH)
Cable Length	5 M (16.4FT)



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